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EXAMINER

SEVERSON, RYAN J

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/764,841
Filing Date: January 26, 2004
Appellant(s): BOYLAN ET AL.

Jennifer R. Leach
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 08/26/2008 appealing from the Office action mailed 10/31/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,910,154	Tsugita et al.	6-1999
5,885,381	Mitose et al.	3-1999
5,713,853	Clark et al.	2-1998

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 2, 4, 6, and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsugita et al. (5,910,154) in view of Mitose et al. (5,885,381).

Tsugita et al. disclose the invention substantially as claimed, including a self-expanding strut assembly (54) including a superelastic alloy (see column 8, lines 48-50) and a filter element (60) disposed on the strut assembly (see figures 6A and 6B). However, Tsugita et al. do not disclose the superelastic alloy includes a ternary element. Attention is drawn to Mitose et al., who teach a superelastic alloy can have a ternary element to reduce the stress hysteresis and improve hot workability in the device (see column 3, lines 51-56) as compared to a binary nickel titanium alloy without a ternary element (compare graphs in figures 2 and 4). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the nickel-titanium material of the strut assembly of Tsugita et al. with the alloy of Mitose et al. having a palladium ternary element to reduce the stress hysteresis and improve hot workability in the device.

Further regarding claim 1, it can be seen in figure 2 that the loading plateau of an alloy without the ternary element is around 400 MPa and in figure 4 it can be seen that the loading plateau of an alloy with the ternary element is approximately 300 MPa. The hysteresis is much lower in the alloy with the ternary element than the alloy without, which is the entire teaching and purpose of Mitose et al. (see column 3, lines 20-31).

Regarding claim 2, the system of Tsugita et al. comprises a sheath that at least partially covers the filter element when it is in its collapsed configuration (see column 12, lines 28-30).

Regarding claim 4, the strut assembly of Tsugita et al. has a conical shape with a first base and the filter has a conical shape with a second base, and the bases are joined (see figure 6A at ref. numeral 58, or see figure 6B at ref. numeral 56). The bases are interpreted to be the tips of the strut assembly and the filter.

Regarding claims 6, 16 and 17, the alloy of Mitose et al. is preferably 5 to 9% ternary element (palladium), 50% titanium, and 41 to 45% nickel (see column 3, lines 51-56). By this composition, when looking in table 1, the transformation temperature (Af) is 25°C, which is less than human body temperature and also less than 45°C.

Regarding claim 15, the alloy of Mitose et al. is a shape memory alloy.

Regarding claims 18 and 19, the ternary element of Mitose et al. is palladium.

Regarding claim 20, Tsugita et al. in view of Mitose et al. disclose the self-expanding strut assembly with a filter element and superelastic alloy with 50 percent titanium, 41 to 45% nickel, and 5 to 9% palladium (in the same manner as applied to claims 1, 6, 16 and 17 above).

Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsugita et al. (5,910,154) in view of Mitose et al. (5,885,381) as applied to claims 1 and 2 above, and further in view of Clark et al. (5,713,853).

The combination of Tsugita et al. with Mitose et al. does not disclose that the assembly is cut from a tube with truncated diamond shape openings. Attention is drawn to Clark et al., who teach a shaft can be cut with a laser (see column 11, lines 25-26) to form the desired structure with accuracy. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to shape the strut members with the diamond shape pattern, as disclosed by Tsugita et al. and shown in figures 6A-6B, by laser cutting, as taught by Clark et al., to form the desired structure with accuracy.

(10) Response to Argument

Appellant argues that the combination of Tsugita et al. with Mitose et al. does not exhibit a reduced stress hysteresis "due to a lowered loading plateau stress." However, as stated above, Mitose et al. teach an alloy comprising three elements (nickel, titanium, and palladium). Appellant's claims 17 and 20 set forth the desired makeup of this alloy by specifying the atomic weight percent of each of the three elements that, when combined, form the claimed alloy. For example, appellant claims the titanium comprises about 30 to 52 atomic percent of the alloy, the ternary element (palladium) comprises up to about 15 atomic percent of the alloy, and the balance of the composition of the alloy being nickel. Mitose et al., at column 3, lines 51-56, disclose the alloy comprising 50 atomic percent titanium (which falls within the 30 to 52%

claimed range), 5 to 9 atomic percent palladium (which falls within the up to 15% claimed range), and the balance being 41 to 45 atomic percent nickel (consistent with the claims). Therefore, Mitose et al. disclose the same material as claimed by the appellant. Since both Mitose et al. and appellant disclose the same material, Examiner asserts the same material characteristics will be exhibited (in this case, decreased stress hysteresis) by both the material claimed by appellant and the material disclosed by Mitose et al.

Appellant argues Mitose et al. desire to achieve as high of a loading stress as possible and cites column 5, lines 22-32. However, at this location, Mitose et al. disclose in part "a tensile force should be as high as possible in *unloading*." Examiner can find no factual support for appellant's argument in the disclosure of Mitose et al. and therefore the argument is not persuasive.

Examiner respectfully points out that appellant is using a known material (the nickel-titanium-palladium alloy of Mitose et al.) in a known product (the filter assembly of Tsugita et al.). As established in *KSR*, 82 USPQ2d at 1395-97, simple substitution of one known element for another (substituting the nickel-titanium alloy with the nickel-titanium-palladium alloy) to obtain predictable results is within the level of one of ordinary skill in the art. Further, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Examiner acknowledges the submission of "the Boylan article" referenced in the arguments; however, in view of the teachings of Mitose et al., the article is not sufficient as a secondary consideration to overcome the outstanding rejection.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Ryan Severson/

Examiner, Art Unit 3731

Conferees:

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TQAS TC3700

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